



**Center for
Clean Air Policy**

State Leadership on Travel Demand Reduction

Steve Winkelman

Center for Clean Air Policy

Manager of Transportation

SIP Innovations Conference

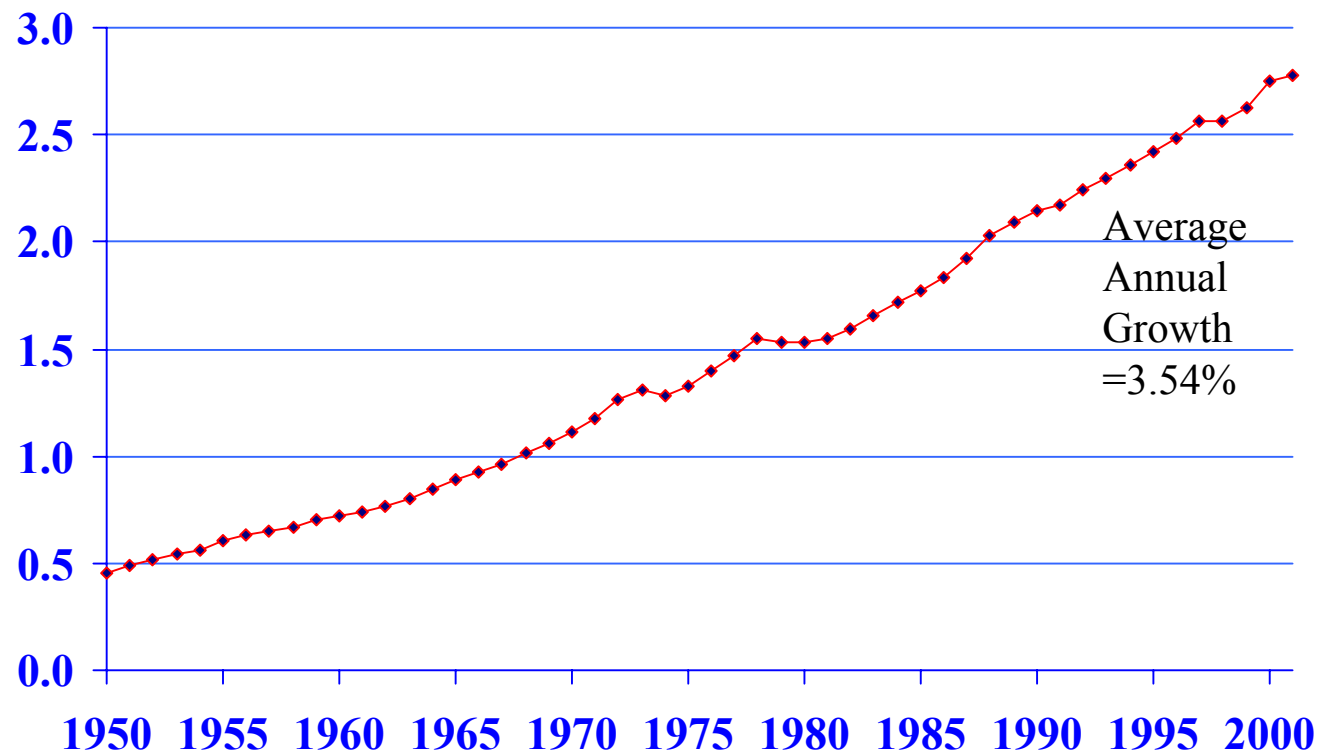
March 13, 2003

Overview

- The Challenge of VMT Growth
- The Promise of Smart Growth
 - » Project-Specific Reduction Potential
 - » Regional Reduction Potential
- State and Local Efforts to Slow VMT
- Conclusions

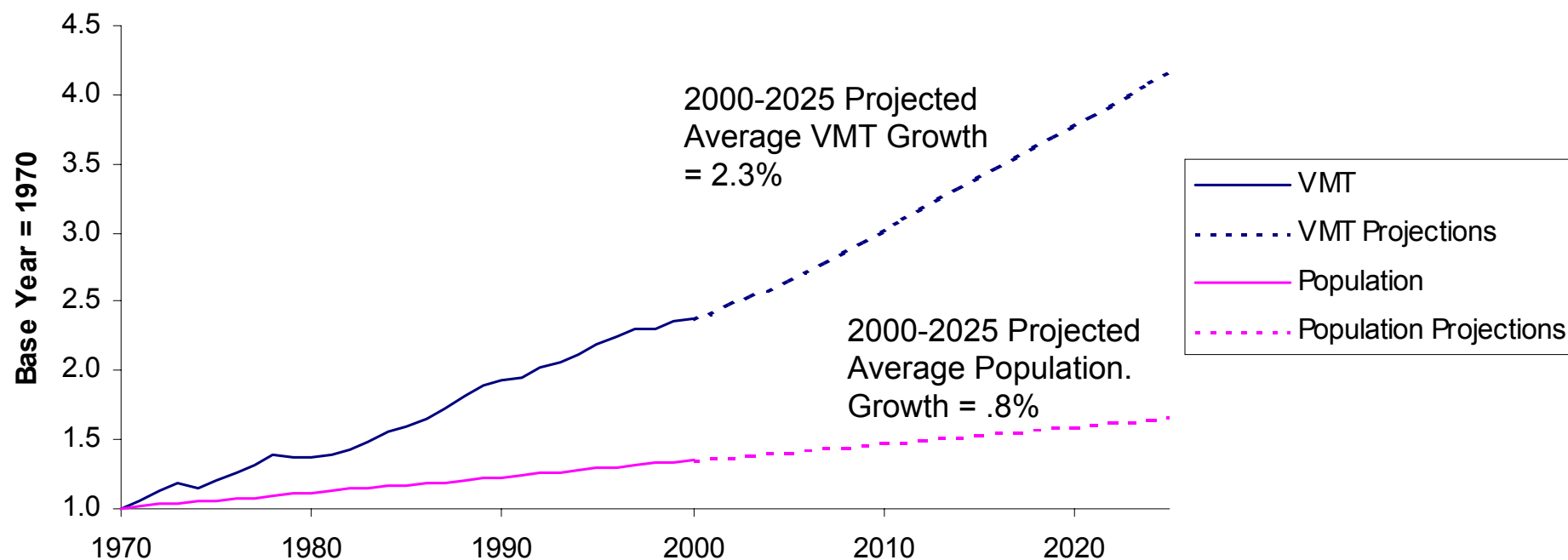
VMT Has Increased Rapidly Over the Last 50 Years

Total U.S. VMT: 1950-2000 (trillion miles per year)



Source: FHWA's Highway Statistics Series Publications
<http://www.fhwa.dot.gov/policy/ohpi/hss/hsspubs.htm>

VMT Growth Continues to Outpace Population Growth



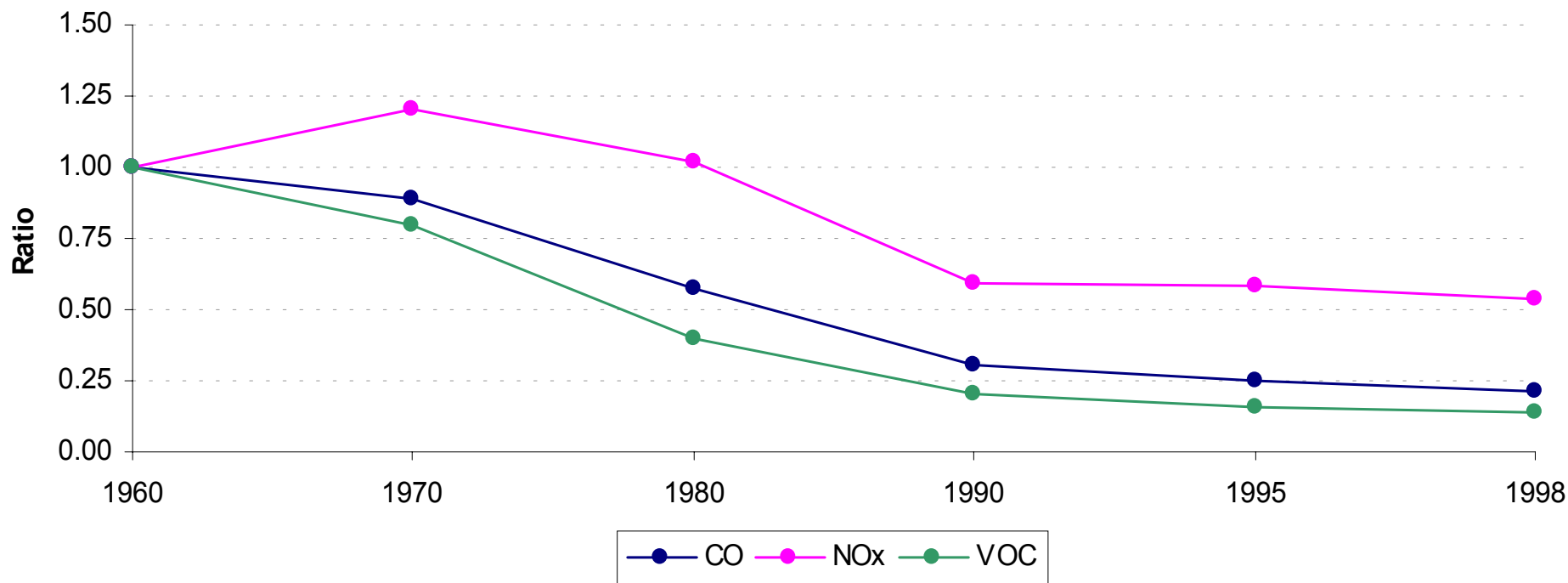
Historical VMT Source: FHWA's Highway Statistics Series
<http://www.fhwa.dot.gov/policy/ohpi/hss/hsspubs.htm>

Source for Projections: AEO 2003 Report http://www.eia.doe.gov/oiaf/aeo/aeotab_7.htm

Historical Population: <http://www.eia.doe.gov/emeu/aer/txt/ptb0105.html>

Emissions *Rates* have Declined Over the Long Term

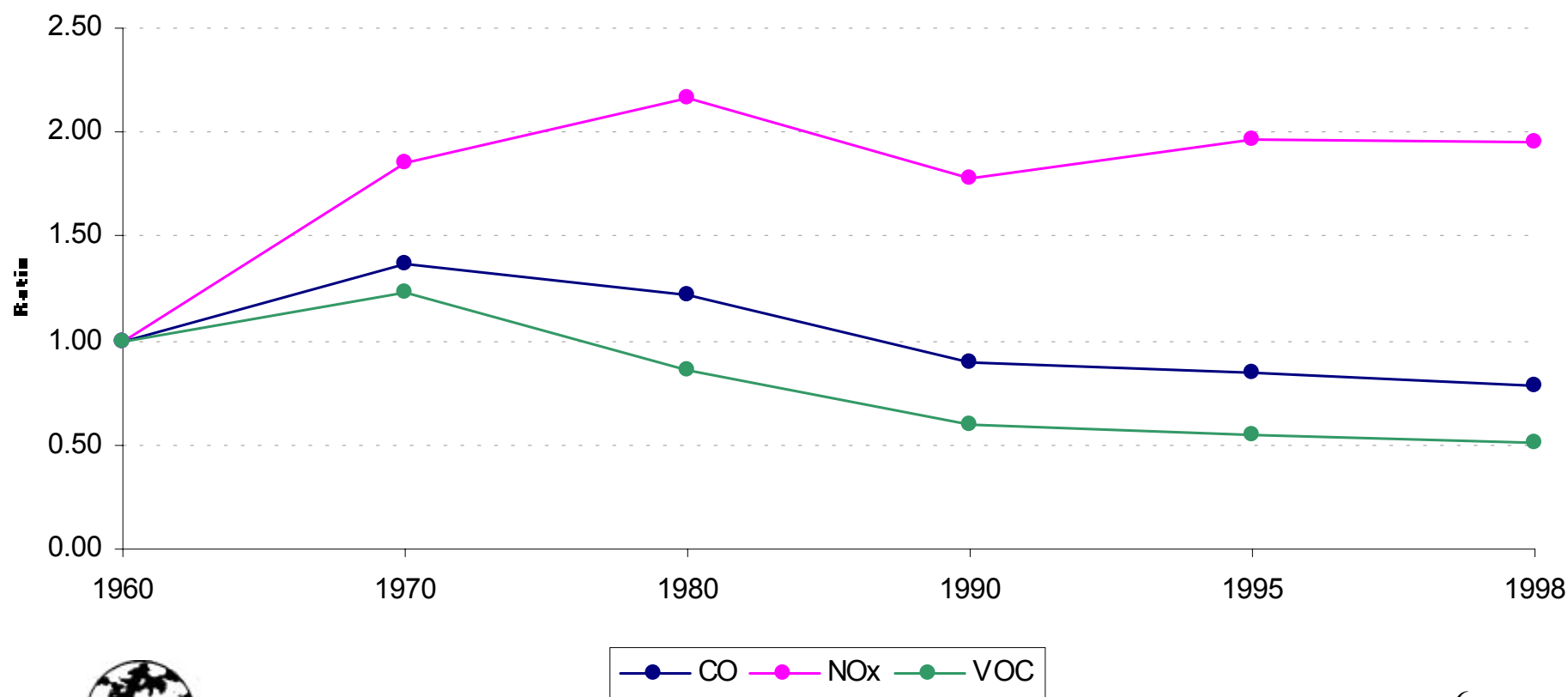
Relative Change in Emissions per Mile since 1960



Source: Indicators of the Environmental Impacts of Transportation, U.S. EPA, 8/99

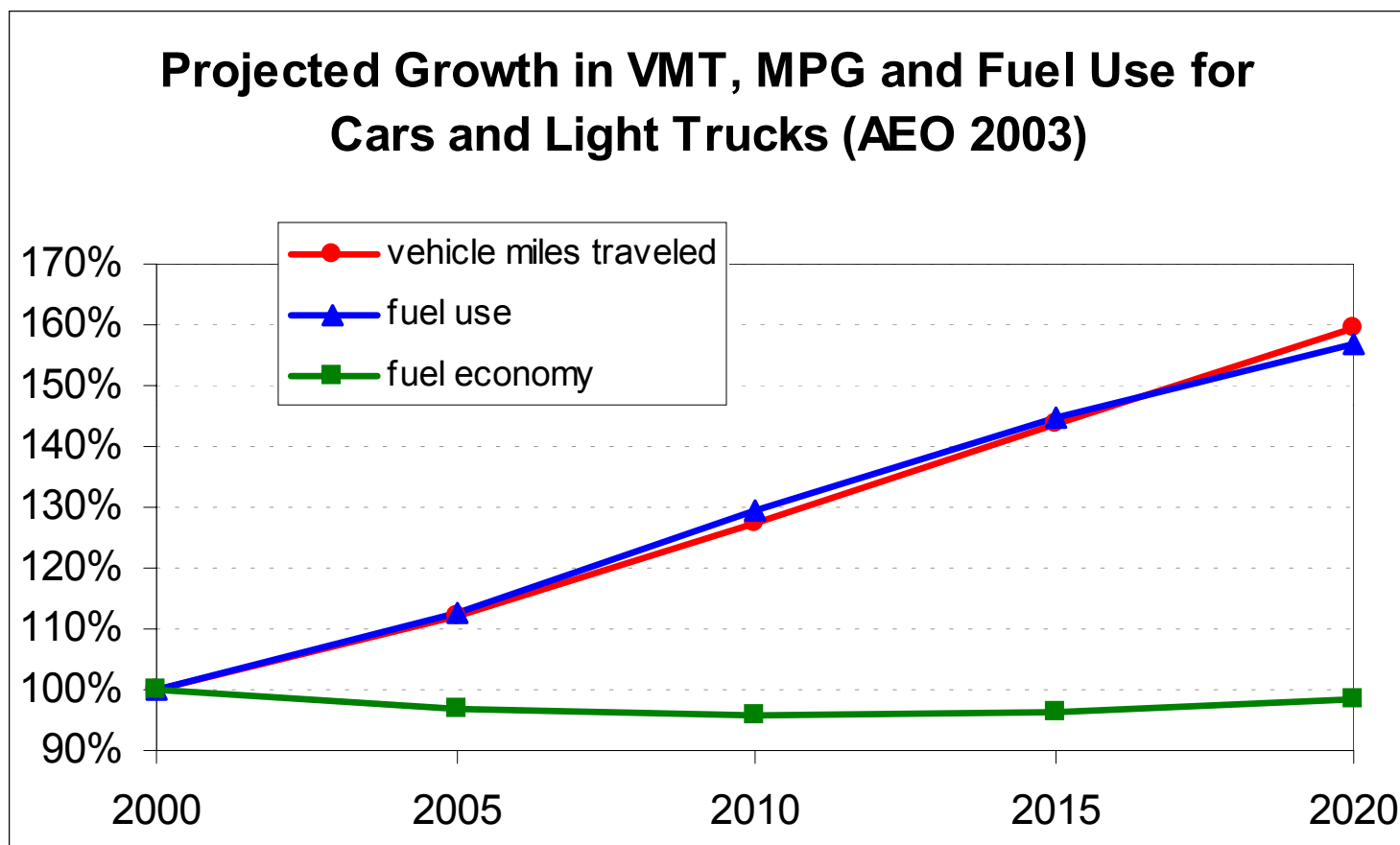
Total Emissions Transportation Have Not Declined Significantly

Relative Change in Total Emissions since 1960



Source: Indicators of the Environmental Impacts of Transportation, U.S. EPA, 8/99

VMT Growth Expected to Negate Fuel Efficiency Improvements



Transportation, Energy Use and Climate Change

- Transportation = 1/3 of US energy & CO₂
 - » almost 2/3 from car and light trucks
 - » fastest growing source
- Key factors that determine energy and CO₂ emission levels from vehicles:
 - » Vehicle efficiency, other characteristics
 - » Fuel characteristics
 - » **Vehicle Miles Traveled (VMT)**
- CCAP State Transportation Work
 - » Transportation Roundtable, NY GHG Plan

Slowing VMT Growth through Smart Growth

- Investing in public transit
- Coordinating transportation & land use planning
- Promoting transit oriented development
- Encouraging alternate travel choices

Technical Literature on Smart Growth

- Ewing et al. (2002): The degree of sprawl is the strongest influence on VMT per capita
 - » (greater influence than population or income)
- Frank (2000): Households in interconnected areas of Seattle generated less than ½ the VMT of HH in the least connected areas
 - » (controlling for HH size, income & vehicle ownership)
- Holtzclaw et al. (2002): Increased accessibility correlates with decreased vehicle use (VMT) and ownership.



» (6 million households in Chicago, San Fran, and LA)

Potential VMT Reductions from Smart Growth Projects

Location	Description of TOD / infill site	VMT Reduction	Emissions Reduction
Atlanta, GA	brownfield, mixed-use	15 – 52%	37 - 81% NOx 293 - 316% VOC
Baltimore, MD	waterfront infill	55%	36% VOCs 40% NOx
Dallas, TX	mixed-use near transit	38%	43% VOC 48% NOx
Montgomery County, MD	infill near transit	42%	31% NOx
San Diego, CA	infill	52%	42% NOx
West Palm Beach, FL	auto-dependent infill	39%	28% NOx

Projected VMT and Emissions Benefits of Digital Harbor

	Regional VMT	NO_x	VOC	Non-motorized trips
	(% change)	(tpd)	(tpd)	(% change)
Year 2005				
Imbalanced Growth	-	-	-	-
Dispersed Growth	-0.5%	-0.30	-0.10	0.24%
Smart Growth	-0.9%	-0.70	-0.20	1.56%
Year 2025				
Imbalanced Growth	-	-	-	-
Dispersed Growth	-0.6%	-1.10	-0.57	0.12%
Smart Growth	-1.7%	-1.60	-0.81	1.79%



Source: Liu, Feng, "Quantifying Travel and Air Quality Benefits of Smart Growth in State Implementation Plans"

Potential Regional VMT Reductions from Smart Growth

Study Location	VMT Reduction	Timeframe
Albany	7 - 14%	2010
Portland	6 – 8%	2010
Sacramento	6.5%	2010
Utah	3%	2010
Seattle	1 - 4%	1990-2020
Baltimore	1 - 3%	1990-2010
California	2.6 - 10.3%	2020



Sources: US EPA/ICF, Envision Utah, California Energy Commission

Shifting Funding Towards More Efficient Alternatives

- Primary opportunities for slowing VMT:
 - » **Reorienting Transportation Funding toward efficient alternatives:**
 - transit, biking, & walking
 - » **Focusing Infrastructure Spending in efficient locations**
 - core cities with existing infrastructure
 - transit-accessible, pedestrian-friendly mixed-use locations

Maryland: Smart Growth & Neighborhood Conservation Program

- **Priority Funding Areas**

- » Limits infrastructure spending to areas designated by local government for growth, by withholding state funds for development (transportation, infrastructure, schools) outside these areas
- » Expected to slow VMT growth and reduce transportation GHG emissions

Maryland: Smart Growth and Neighborhood Conservation Program

- Brownfield redevelopment
- Live Near Your Work Program
- Job Creation Tax Credit
 - » encourages business dvpt near labor pools
- Rural Legacy Program
 - » earmarks funds for open space protection
- Goal to double transit ridership by 2020
 - » \$1.75 billion for transit



New York: State Energy Plan

(June 2002)

- Redirect transportation funding toward energy-efficient transportation alternatives
- Provide incentives for use of alt. modes
- Consider CO₂ emissions in transportation planning and environmental review
- Work with MPOs to quantify energy & emissions impacts of transportation plans
- Target open space funding to prevent suburban sprawl, reduce VMT & emissions

New York: Quality Communities Task Force (Jan. 2001)

- Main Street Initiative
 - » encourages location of State facilities in urban centers
- Incentives for brownfield redevelopment
- Improved community transportation planning and coordination
- Improved inter-modal transport centers
- Preserve 1 million acres of open space

New York: Climate Change Task Force

Draft Recommendations

- Invest more in transit, ped, bike, less in new roads
- Harmonize other State funding and Incentives with climate change and Quality Communities goals
- Require GHG reporting in SEQRA, TIPs, and LRTPs
- Integrate Land Use & Transportation Planning
 - » Increased assistance for MPOs
 - » alternative scenario analyses, induced demand, ped/bike
- Other: Emissions reporting from major developments; commuter choice, vanpooling; congestion pricing

New Jersey: Executive Order 4

- Established the NJ Smart Growth Council
- Council must ensure that State transportation & infrastructure funding, incentives, regulation, school construction are consistent with smart growth principles, open space preservation, community revitalization and the State Plan
- Attorney General directed to intervene on behalf of cities, counties or regional planning entities that are defending smart growth plans endorsed by the State Planning Commission

New Jersey: Other Initiatives

- “Upstairs, Downstairs” program
 - » Provides below market-rate mortgage funds to support property owners that build residences above commercial units in downtown areas
- Garden State Preservation Trust Act
 - » \$2 billion over 10 yrs for open space protection

Complementary Policies

- **Location Efficient Mortgages**

- » Chicago, San Fran., Seattle, Twin Cities, Pittsburgh, MA

- **Pay-As-You-Drive Insurance**

- » Pilot projects in TX (legislation in WA, OR, MA, GA, PA)

- **Congestion Pricing**

- » NY/NJ, London

- **Commuter Choice, Parking Cash-out**

- **Transit Repositioning**

- » Boulder, CO replaced traditional bus routes with custom service, based on community input & market research

- **Vanpools Programs**



- » Washington State DOT, TDM Resource Center

Creating Choices for Intercity Travel

- Aviation = 10% of transportation GHG emissions and energy use
 - » Expected to grow 2.8%/yr through 2020.
 - » Short (< 500 miles) flights are 58% of total
- Opportunities exist to develop a network of high speed train routes, connected to long distance air routes and intercity bus service.
 - » High speed rail = over 50% of the market share for DC- Boston corridor
- CCAP examining emissions benefits of HSR

Conclusions

- Rapid VMT growth poses a major challenge
- Federal and state funding decisions have a major impact on development patterns and VMT growth
- Targeting infrastructure funding to efficient modes and efficient locations can help slow VMT growth
- Federal and state support needed to aid regions and cities integrate transportation and land use planning
 - » Models need to account for induced demand, micro-level land use, pedestrian & bike travel;
 - » Smart Growth scenarios crucial for assessing least-cost, least-impact options
- Requires a set of complementary, reinforcing policies

For More Information...

*State and Local Leadership on
Transportation and Climate Change*
is available at: www.ccap.org

Steve Winkelman

Center for Clean Air Policy

Manager of Transportation

swinkelman@ccap.org

